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ABSTRACT

This digest discusses the origins of Howard Gardner's Theory of Multiple Intelligences, his definition of intelligence, the incorporation of the theory into the classroom, and its role in alternative assessment practices. Gardner defines intelligence as the "capacity to solve problems or to fashion products that are valued in one or more cultural setting" (1989). Using biological and cultural research, he developed a list of the following intelligences: (1) logical-mathematical intelligence; (2) linguistic intelligence; (3) spatial intelligence; (4) musical intelligence; (5) bodily-kinesthetic intelligence; (6) interpersonal intelligence; and (7) intrapersonal intelligence. Gardner asserts that the intelligences seldom operate independently; they are used concurrently and complement each other. Accepting the theory of multiple intelligences has several implications for classroom teachers. Teachers should think of all intelligences as equally important and should structure material in a way that engages most or all of the intelligences. Although it is not practical to accommodate every lesson to all of the learning styles found within one classroom, teachers should show students how to use their more developed intelligences to assist in understanding subjects that use their weaker intelligences. Supporters of Gardner's theory argue that alternative assessment methods that allow students to explain material in their own ways allow more students to participate successfully in classroom learning. (Contains nine references.) (SLD)

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MULTIPLE INTELLIGENCES: GARDNER'S THEORY

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Multiple Intelligences: Gardner's Theory

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Arguing that *"reason, intelligence, logic, knowledge are not synomous. . ."*, Howard Gardner (1983) proposed a new view of intelligence that is rapidly being incorporated in school curricula. In his Theory of Multiple Intelligences, Gardner expanded the concept of intelligence to also include such areas as music, spacial relations, and interpersonal knowledge in addition to mathematical and linguistic ability.

This digest discusses the origins of Gardner's Theory of Multiple Intelligences, his definition of intelligence, the incorporation of the Theory of Multiple Intelligences into the classroom, and its role in alternative assessment practices.

Seven Intelligences

Gardner defines intelligence as *"the capacity to solve problems or to fashion products that are valued in one or more cultural setting"* (Gardner & Hatch, 1989). Using biological as well as cultural research, he formulated a list of seven intelligences. This new outlook on intelligence differs greatly from the traditional view which usually recognizes only two intelligences, verbal and computational. The seven intelligences Gardner defines are:

- **Logical-Mathematical Intelligence**--consists of the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking.
- **Linguistic Intelligence**-- involves having a mastery of language. This intelligence includes the ability to effectively manipulate language to express oneself rhetorically or poetically. It also allows one to use language as a means to remember information.
- **Spatial Intelligence**-- gives one the ability to manipulate and create mental images in order to solve problems. This intelligence is not limited to visual domains-- Gardner notes that spatial intelligence is also formed in blind children.
- **Musical Intelligence**-- encompasses the capability to recognize and compose musical pitches, tones, and rhythms. (Auditory functions are required for a person to develop this intelligence in relation to pitch and tone, but it is not needed for the knowledge of rhythm.)
- **Bodily-Kinesthetic Intelligence**-- is the ability to use one's mental abilities to coordinate one's own bodily movements. This intelligence challenges the popular belief that mental and physical activity are unrelated.
- **The Personal Intelligences**-- includes **interpersonal intelligence** -- the ability to understand and discern the feelings and intentions of others-- and **intrapersonal intelligence** --the ability to understand one's own feelings and motivations. These two intelligences are separate from each other. Nevertheless, because of their close association in most cultures, they are often linked together.

Although the intelligences are anatomically separated from each other, Gardner claims that the seven intelligences very rarely operate independently. Rather, the intelligences are used concurrently and typically complement each other as individuals develop skills or solve problems. For example, a dancer can excel in his art only if he has 1) strong musical intelligence to understand the rhythm and variations of the music, 2) interpersonal intelligence to understand how he can inspire or emotionally move his audience through his movements, as well as 3) bodily-kinesthetic intelligence to provide him with the agility and coordination to complete the movements successfully.

Basis for Intelligence

Gardner argues that there is both a biological and cultural basis for the multiple intelligences. Neurobiological research indicates that learning is an outcome of the modifications in the synaptic connections between cells. Primary elements of different types of learning are found in particular areas of the brain where corresponding transformations have occurred. Thus, various types of learning results in synaptic connections in different areas of the brain. For example, injury to the Broca's area of the brain will result in the loss of one's ability to verbally communicate using proper syntax. Nevertheless, this injury will not remove the patient's understanding of correct grammar and word usage.

In addition to biology, Gardner (1983) argues that culture also plays a large role in the development of the intelligences. All societies value different types of intelligences. The cultural value placed upon the ability to perform certain tasks provides the motivation to become skilled in those areas. Thus, while particular intelligences might be highly evolved in many people of one culture, those same intelligences might not be as developed in the individuals of another.

Using Multiple Intelligences in the Classroom

Accepting Gardner's Theory of Multiple Intelligences has several implications for teachers in terms of classroom instruction. The theory states that all seven intelligences are needed to productively function in society. Teachers, therefore, should think of all intelligences as equally important. This is in great contrast to traditional education systems which typically place a strong emphasis on the development and use of verbal and mathematical intelligences. Thus, the Theory of Multiple

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Intelligences implies that educators should recognize and teach to a broader range of talents and skills.

Another implication is that teachers should structure the presentation of material in a style which engages most or all of the intelligences. For example, when teaching about the revolutionary war, a teacher can show students battle maps, play revolutionary war songs, organize a role play of the signing of the Declaration of Independence, and have the students read a novel about life during that period. This kind of presentation not only excites students about learning, but it also allows a teacher to reinforce the same material in a variety of ways. By activating a wide assortment of intelligences, teaching in this manner can facilitate a deeper understanding of the subject material.

Everyone is born possessing the seven intelligences. Nevertheless, all students will come into the classroom with different sets of developed intelligences. This means that each child will have his own unique set of intellectual strengths and weaknesses. These sets determine how easy (or difficult) it is for a student to learn information when it is presented in a particular manner. This is commonly referred to as a learning style. Many learning styles can be found within one classroom. Therefore, it is impossible, as well as impractical, for a teacher to accommodate every lesson to all of the learning styles found within the classroom. Nevertheless the teacher can show students how to use their more developed intelligences to assist in the understanding of a subject which normally employs their weaker intelligences (Lazear, 1992). For example, the teacher can suggest that an especially musically intelligent child learn about the revolutionary war by making up a song about what happened.

Towards a More Authentic Assessment

As the education system has stressed the importance of developing mathematical and linguistic intelligences, it often bases student success only on the measured skills in those two intelligences. Supporters of Gardner's Theory of Multiple Intelligences believe that this emphasis is unfair. Children whose musical intelligences are highly developed, for example, may be overlooked for gifted programs or may be placed in a special education class because they do not have the required math or language scores. Teachers must seek to assess their students' learning in ways which will give an accurate overview of the their strengths and weaknesses.

As children do not learn in the same way, they cannot be assessed in a uniform fashion. Therefore, it is important that a teacher create an "intelligence profiles" for each student. Knowing how each student learns will allow the teacher to properly assess the child's progress (Lazear, 1992). This individualized evaluation practice will allow a teacher to make more informed decisions on what to teach and how to present information.

Traditional tests (e.g. multiple choice, short answer, essay. . .) require students to show their knowledge in a predetermined manner. Supporters of Gardner's theory claim that a better approach to assessment is to allow students to explain the material in their own ways using the different intelligences. Preferred assessment methods include student portfolios, independent projects, student journals, and assigning creative tasks. An excellent source for a more in-depth discussion on these different evaluation practices is Lazear (1992).

Conclusion

Schools have often sought to help students develop a sense of accomplishment and self-confidence. Gardner's Theory of Multiple Intelligences provides a theoretical foundation for recognizing the different abilities and talents of students. This theory acknowledges that while all students may not be verbally or mathematically gifted, children may have an expertise in other areas, such as music, spatial relations, or interpersonal knowledge. Approaching and assessing learning in this manner allows a wider range of students to successfully participate in classroom learning.

Additional Reading

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